NATIONAL PETROLEUM RESERVE IN ALASKA

HISTORY OF DRILLING OPERATIONS

U. S. NAVY

SOUTH SIMPSON NO. 1

HUSKY OIL NPR OPERATIONS, INC.
Prepared by: S. L. Hewitt
Edited by: Gordon W. Legg & R. G. Brockway

For the

U. S. GEOLOGICAL SURVEY
Office of the National Petroleum Reserve in Alaska
Department of the Interior
JUNE 1983

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SOUTH SIMPSON NO. 1

INTRODUCTION

The South Simpson No. 1 is located in the National Petroleum Reserve in Alaska (formerly the Naval Petroleum Reserve No. 4), North Slope, Alaska (Figure 1). The well is located 609 feet from the south line and 451 feet from the east line of Section 22, Township 17 North, Range 12 West, Umiat Meridian (Latitude: 70°48'24.75" North; Longitude: 154°58'54.61" West). Alaska State Plane Coordinates are: X = 381,771 and Y = 6,145,768, Zone 5. Elevations are: Kelly Bushing 25', Ground 5'±. Drilling related operations commenced with rig-up on February 20, 1977, and terminated on May 5, 1977.

The well was drilled to a total depth of 8,795 feet. The primary objectives of the well were the mid-Jurassic Kingak sand and the Sadlerochit Group, with secondary interest in possible sands in the "Pebble Shale". At the conclusion of the drilling and evaluation operations, the well was plugged and abandoned, with cement and mechanical plugs set at selected intervals.

Husky Oil NPR Operations, Inc. supervised and directed the drilling and support operations as prime contractor for the Office of Naval Petroleum and Oil Shale Reserves. Nabors Alaska Drilling, Inc. was the drilling contractor; and Nabors Rig 1, an Emsco A 800, was the drilling rig used.

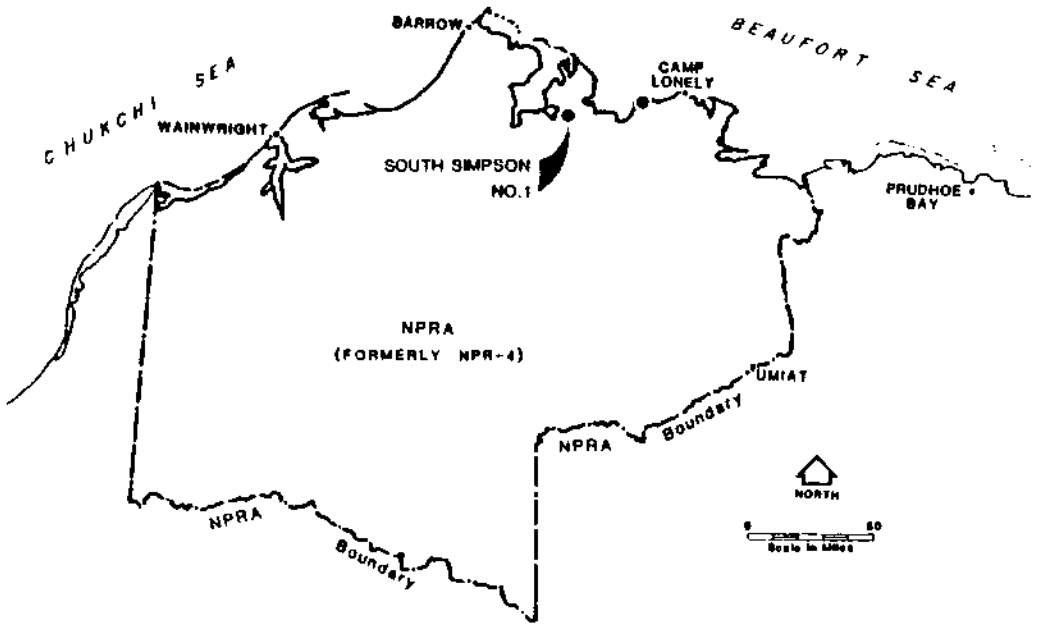


FIGURE 1 - WELL LOCATION MAP - SOUTH SIMPSON NO. 1

DRILLING SUMMARY

Field operations at the South Simpson No. 1 location commenced on December 30, 1976, with the mobilization of construction crews and equipment required to build the drilling pad and an ice airstrip to accommodate C-130 Hercules aircraft. Construction work was completed on February 10, 1977, and the crews and equipment moved to another location.

Rig move-in operations began on February 12, 1977. Portions of the rig, Nabors 1, had been moved to Lonely during the summer of 1976 by barge. The remainder was left at Deadhorse. Those parts of the rig at Lonely were transported to South Simpson by Rolligon, while the components at Deadhorse were flown in, using Hercules aircraft. Fifty-seven Herc loads and 15 Rolligon loads were required to move the rig to the location. Rig-up operations began on February 20, 1977, and required 17 days. The well was spudded on March 9, 1977, at 8:00 a.m.

Weather conditions were generally good during rig move and rig up. Blowing snow conditions prohibited flying on three days of the move.

During rig-up, a 30" conductor had been set at 95' and cemented with 360 sacks ArcticSet cement. An 18-1/2" pilot hole was drilled to 510' and opened to 26". After conditioning the hole, 20" deep conductor was run and set at 495'. The 20" was cemented to surface with 1,200 sacks of ArcticSet cement with full returns to surface.

A 20" casing head and 20" annular blowout preventer and diverter lines were installed on the deep conductor. The 20" shoe was drilled out and a 13-1/2" hole drilled from 510' to 796'. While drilling from 796' to 950', 100 barrels of mud were lost. A lost-circulation pill was spotted and drilling resumed to 2215'. While tripping at 2215', the hole would not stay full. A 300-barrel lost-circulation material pill was spotted across the zone of previous lost circulation. Partial returns were gained but were lost again. A second lost-circulation material pill was spotted and full returns regained. While conditioning the hole, circulation was again lost. A third lost-circulation material pill was used to regain circulation. After stabilizing the hole, logging operations began. The hole was logged with the Dual Induction Laterolog and the BHC Sonic/Gamma Ray log. Four barrels of mud were lost during logging. After logging, 16" surface casing was run and set at 2175'. The casing was cemented with 2,000 sacks of ArcticSet cement. After pumping 1,750 sacks, returns were lost. The remaining 250 sacks were pumped and displaced with no returns. A top cement job through 1" pipe was performed from 360' to surface with 300 sacks of ArcticSet cement.

A 16" 5,000 psi blowout-preventer stack (SRRA arrangement) was installed on the 16" casing head. A 5,000 psi choke manifold and kill line were also installed. The 16" casing was tested to 2,000 psi and drilled out with a 13-1/2" bit. The formation was tested to a 0.64 psi/ft. gradient. A 13-1/2" hole was drilled from 2215' to 5279'. Lost circulation occurred at

5279' and 220 barrels of mud were lost. A lost-circulation material pill was spotted and circulation regained. Drilling resumed to 5965' when lost circulation again occurred, losing 439 barrels of mud. Another lost-circulation material pill was spotted and circulation regained. Drilling resumed to 6445'.

After tripping for a new bit at 6445', tight hole was encountered and the hole had to be reamed to bottom from 5960'. Drilling resumed to 7020' with some tight hole on trips. At 7020', lost circulation occurred and 50 barrels of mud were lost. A lost-circulation material pill was spotted and circulation regained. Drilling was resumed to 7209'. The hole was logged with the Dual Induction Laterolog, BHC Sonic/Gamma Ray log, Compensated Formation Density/Compensated Neutron/Gamma Ray log, and the High Resolution Dipmeter. The Compensated Formation Density/Compensated Neutron/Gamma Ray log had to be rerun. Twenty-seven sidewall cores were attempted and 25 recovered. After conditioning, 10-3/4" intermediate casing was run and set at 7206'. The casing was cemented with 1,000 sacks of Class "G" cement containing turbulence inducer and retarder, with full returns while cementing. Two FO cementers were run in the casing string and landed at 2093' and 2010' for use if Arctic Pack procedures became necessary.

The 10-3/4" casing was drilled out with an 8-1/2" bit and the formation tested to a 0.62 psi/ft. gradient. An 8-1/2" hole was drilled from 7209' to 8795' with occasional reaming required on trips. The 8-1/2" hole was logged from 8804' (Schlumberger's total depth) to the 10-3/4" casing shoe with the Dual Induction Laterolog, BHC Sonic/Gamma Ray log, Compensated Formation Density/Compensated Neutron/Gamma Ray log, and High Resolution Dipmeter. A velocity survey was also recorded. Nineteen sidewall cores were attempted and 13 recovered. A Variable Density/Cement Bond log was run to determine the quality of the cement across zones of interest behind the 10-3/4" casing.

All logs were recorded on magnetic tape and computer log interpretations were prepared using Schlumberger's Synergetic Log Systems. A single shot deviation survey was run while drilling. The hole was, for all practical purposes, "straight", with the maximum deviation of 1-3/4° occurring at 6445'.

At the conclusion of the log evaluation, cement plugs were placed across selected intervals in the 8-1/2" open hole as follows: Plug No. 1 from 8250' to 8050' with 70 sacks of Class "G" cement; Plug No. 2 from 7360', across the 10-3/4" casing shoe, to 7160' with 140 sacks of Class "G". A 10-3/4" cement retainer was set at 7000' and tested to 2,500 psi.

The 10-3/4" casing was perforated over the interval 6522' to 6568' at four shots per foot. Drill-Stem Test No. 1 was run over this interval with the packer set at 6447'. Gas surfaced at 10 minutes into the final flow period and flowed at an estimated rate of 75 MCFD. On reversing, 1215' of muddy salt water was also recovered. A cement retainer was set at 6420', and the perforations were squeezed with 90 sacks of Class "G" cement. Ten sacks were spotted on top of the retainer.

The 10-3/4" casing was perforated at four shots per foot as follows: 6231-6241', 6211-6220', and 6183-6202'. Drill-Stem Test No. 2 was run with the packer set at 6108'. The test recovered 705' of watery mud with some gas cutting. A retainer was set at 6080' and the perforations squeezed with 90 sacks of Class "G" cement. Ten sacks of cement were spotted on top of the retainer.

The 10-3/4" casing was perforated at four shots per foot as follows: 5903-5946', 5846-5856', 5807-5816'. Drill-Stem Test No. 3 was run with the packer set at 5737'. On reversing out, a small amount of gas was recovered ahead of the water cushion. Four barrels of rat-hole mud were also recovered. A retainer was set at 5700'. The perforations were squeezed with 90 sacks of Class "G" cement, and 10 sacks were spotted on top of the retainer.

The 10-3/4" casing was cut at 2115', recovering both FO cementers. A 70-sack ArcticSet cement plug was spotted at 2005', and the mud reversed out to water at 1795'. The well began to flow back, and the water was circulated out with mud. Lost circulation occurred and 330 barrels of mud were lost. After regaining circulation, a 300-sack Class "G" cement plug containing 2% calcium chloride was pumped. Eighty-five sacks were down-squeezed around the 10-3/4" stub and 215 sacks spotted above the stub with full returns. A second Class "G" plug of 500 sacks was spotted at 500' in the 16" casing. A final surface plug of 21 sacks ArcticSet cement was placed in the top 20' of the 16" casing. The abandonment marker was set and the rig released April 30, 1977, at 3:00 a.m. The rig was rigged down and stacked on location for the summer.

Detailed drilling information, in the form of bit records, mud summary, time analysis, and casing and cementing reports, is included in the body of the report.

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Husky Oil NPR Operations, Inc.

3. ADDRESS OF OPERATOR: 3201 C Street, Suite 600, Anchorage, AK 99503

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: X = 381,771. y = 6,145,768. Sec 22, T17N, R12W
At proposed prod. zone: Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 55 Miles East and South of Barrow

5. LEASE DESIGNATION AND SERIAL NO.: N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
7. UNIT AGREEMENT NAME: N/A
8. FARM OR LEASE NAME: Naval Petroleum Reserve #4
9. WELL NO.: So. Simpson #1
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 22, T17N, R12W
12. COUNTY OR PARISH: No. Slope Borough
13. STATE: Alaska

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
52,800	23,680,000	N/A
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
270,000'	8670'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 5' G.L. (est), 25' K.B. (est).

22. APPROX. DATE WORK WILL START*: February 15, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
26"	20"	133 (k-55)	500	To surface w/Permafrost
18½"	16"	84 (ss-95)	2500	To surface w/Permafrost
13½"	10 3/4"	60.7 (ss+95)	7100	200 sks Class "G"
8½"	7"	32 (N-80)	Liner	275 sks Class "G" sufficient to cement entire liner length

This form is being filed for information purposes only. Please refer to letter from Director, Naval Petroleum and Oil Shale Reserves, Serial #394, 27 August 1968.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED _____ TITLE Drilling Manager DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Accepted for the record (Orig. Sgd. RODNEY A. SMITH)

APPROVED BY _____ TITLE OIL AND GAS SUPERVISOR DATE OCT 29 1976

CONDITIONS OF APPROVAL, IF ANY:

Form 10-401
REV 1-1-71

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

STATE OF ALASKA

OIL AND GAS CONSERVATION COMMITTEE

PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Husky Oil NPR Operations, Inc.

3. ADDRESS OF OPERATOR: 3201 C Street, Suite 600, Anchorage, AK 99503

4. LOCATION OF WELL
At surface: x = 381,771. y = 6,145,768. Sec 22, T17N, R12W
At proposed prod. zone: Same

5. [ ]

6. LEASE DESIGNATION AND SERIAL NO: N/A

7. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

8. UNIT FARM OR LEASE NAME: Naval Petroleum Reserve #4

9. WELL NO: So. Simpson #1

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., (BOTTOM HOLE OBJECTIVE): Sec 22, T17N, R12W

12. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 55 miles East and South of Barrow

13. [ ]: No. Slope Borough

14. BOND INFORMATION
TYPE N/A Surety and/or No. Amount

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit, if any) 52,800	16. NO. OF ACRES IN LEASE 23,680,000	17. NO. ACRES ASSIGNED TO THIS WELL N/A
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL DRILLING, COMPLETED, OR APPLIED FOR, FT 270,000'	19. PROPOSED DEPTH 8670'	20. ROTARY OR CABLE TOOLS Rotary
21. ELEVATIONS (Show whether DF, RT, CR, etc.) 5' GL (est). 25' KB (est).		22. APPROX. DATE WORK WILL START* February 15, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	GRADE	SETTING DEPTH	QUANTITY OF CEMENT
26"	20"	133	k-55	500	To surface w/Permafrost
18½"	16"	84	k-55	2500	To surface w/Permafrost
13½"	10 3/4"	60.7	p-110	7100	200 sks Class "G"
8½"	7"	32	N-80	Liner	275 sks Class "G" sufficient to cement entire liner length

This form is being filed for information purposes only. Please refer to letter from Director, Naval Petroleum and Oil Shale Reserves, Serial #394, 27 August 1968.

RECEIVED
OCT 21 1976
DIVISION OF OIL AND GAS
ANCHORAGE

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program.

24. I hereby certify that the foregoing is True and Correct

SIGNED _____ DATE _____ TITLE Drilling Manager

(This space for State office use)

CONDITIONS OF APPROVAL, IF ANY

SAMPLES AND CORE CHIPS REQUIRED [ ] YES [ ] NO	MUD LOG [ ] YES [ ] NO	OTHER REQUIREMENTS
DIRECTIONAL SURVEY REQUIRED [ ] YES [ ] NO		A.P.I. NUMERICAL CODE 50-279-20001

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

*See Instructions On Reverse Side

Revised 6/9/83

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other Abandonment

2. NAME OF OPERATOR: Husky Oil NPR Operations, Inc.

3. ADDRESS OF OPERATOR: 3201 C Street, Suite 600, Anchorage, AK 99503

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface X = 381,771; y = 6,145,768
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.: N/A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: Naval Petroleum Reserve No.

9. WELL NO.: So. Simpson No. 1

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 22, T17N, R12W

14. PERMIT NO.: N/A — DATE ISSUED:

12. COUNTY OR PARISH: North Slope — 13. STATE: Alaska

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
3/9/77	4/19/77	Abandoned: 4/30/77	5'GL (est); 25'KB (est)	5' (est)

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
8795' MD	Surface	N/A	→	0 - 8795'	None

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: N/A

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL, BHC-Sonic/GR, FDC/CNL/GR, HRD, CBL/VDC/GR, Velocity Survey

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	133#	495'	26"	1200 sx Arctic Set II	None
16"	84#	2175'	18 1/2"	2000 sx Arctic Set II	None
10 3/4"	60.7#	7206'	13 1/2"	1000 sx Class "G"	2001'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)
6522-68', 6231-41', 6211-20', 6183-6202', 5903-46', 5846-56', 5807-16'.
4" HyperJet II at 4JSPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6522-68	Retainer, 100 sx Class "G"
6231-41, 6211-20, 6183-6202	Retainer, 100 sx Class "G"
5903-46, 5846-56, 5807-16	Retainer, 100 sx Class "G"

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
N/A	N/A	P and A

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED _____ TITLE Drilling Manager DATE _____

*(See Instructions and Spaces for Additional Data on Reverse Side)

Revised 6/9/83

SUBMIT IN DUPLICATE*

STATE OF ALASKA

OIL AND GAS CONSERVATION COMMITTEE

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5 API NUMERICAL CODE: 50-279-20001

6 LEASE DESIGNATION AND SERIAL NO: N/A

1a TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

7 IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

b TYPE OF COMPLETION: NEW ☐ WORK OVER ☐ DEEP EN ☐ PLUG BACK ☐ DIFF RESVR ☐ Other

8 UNIT, FARM OR LEASE NAME: NavalPetroleumReserveNo. 4

2 NAME OF OPERATOR: Husky Oil NPR Operations, Inc.

9 WELL NO: So. Simpson No. 1

3 ADDRESS OF OPERATOR: 3201 C Street, Anchorage, AK 99503

10 FIELD AND POOL, OR WILDCAT: Wildcat

4 LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: x = 381,771; y = 6,145,768
At top prod. interval reported below
At total depth

11 SEC., T., R., M., (BOTTOM HOLE OBJECTIVE): Sec 22, T17N, R12W

12 PERMIT NO: N/A

13 DATE SPUDDED	14 DATE T.D. REACHED	15 DATE COMP. SUSP. OR ABAND.	16 ELEVATIONS (DF, RKB, RT, GR, ETC.)*	17 ELEV. CASINGHEAD
3/9/77	4/19/77	Abandoned 4/30/77	5' GL (est); 25' KB (est)	5' (est)

18 TOTAL DEPTH, MD & TVD	19 PLUG BACK MD & TVD	20 IF MULTIPLE COMPL., HOW MANY*	21 ROTARY TOOLS INTERVALS DRILLED BY	CABLE TOOLS
8795' MD	Surface	N/A	0-8795'	None

22 PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: N/A

23 WAS DIRECTIONAL SURVEY MADE: No

24 TYPE ELECTRIC AND OTHER LOGS RUN: DIL, BHC-Sonic/GR, FDC/CNL/GR, HRD, CBL/VDL/GR, Velocity Survey

25 CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB/FT.	GRADE	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	133#	K-55	495'	26"	1200 sx Arctic Set II	None
16"	84#	K-55	2175'	18 1/2"	2000 sx Arctic Set II	None
10 3/4"	60.7#	P-110	7206'	13 1/2"	1000 sx Class "G"	2001'

26 LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

27 TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

28 PERFORATIONS OPEN TO PRODUCTION (Interval, size and number): N/A

29 ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6522-68' @ 4JSPF	Retainer; 100 sx Class "G"
6213-41', 6311-20', 6183-6202' @ 4JSPF	Retainer; 100 sx Class "G"
5903-46', 5846-56', 5807-16' @ 4JSPF	Retainer; 100 sx Class "G"

30 PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
N/A	N/A	P and A

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD	OIL—BBL	GAS—MCF	WATER—BBL	GAS-OIL RATIO
			→				

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL	GAS—MCF	WATER—BBL	OIL GRAVITY-API (CORR.)
		→				

31 DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

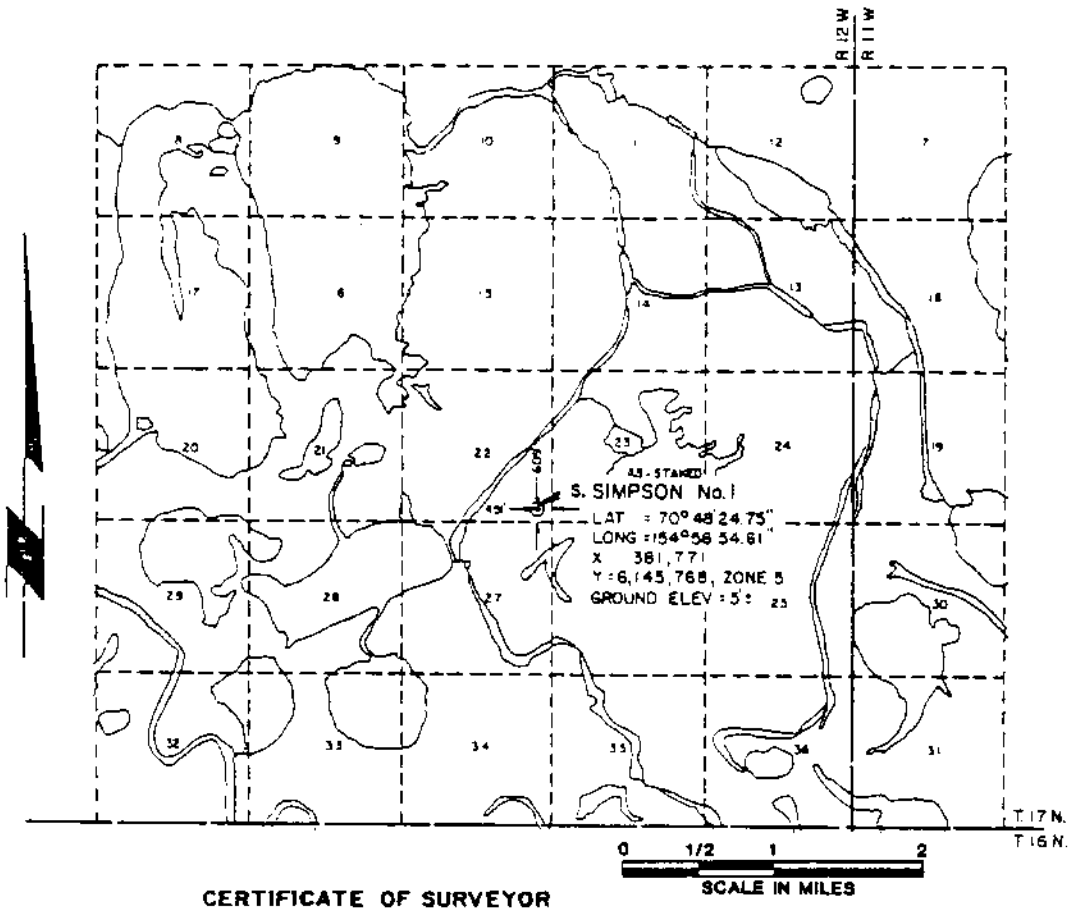
32 LIST OF ATTACHMENTS

33 I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED _____ TITLE Drilling Manager DATE

*(See Instructions and Spaces for Additional Data on Reverse Side)

RECEIVED, DIVISION OF OIL & GAS CONSERVATION, ANCHORAGE, AK, JUNE 13, 1977



CERTIFICATE OF SURVEYOR

I hereby certify that I am properly registered and licensed to practice land surveying in the State of Alaska and that this plat represents a location survey made by me or under my supervision, and that all dimensions and other details are correct.

STATE OF ALASKA
49TH
Andrew P. Potts
NO. 3514-S
REGISTERED PROFESSIONAL LAND SURVEYOR

7-22-76
Date

Andrew P. Potts
SURVEYOR

C. J. R.

AS-STAKED

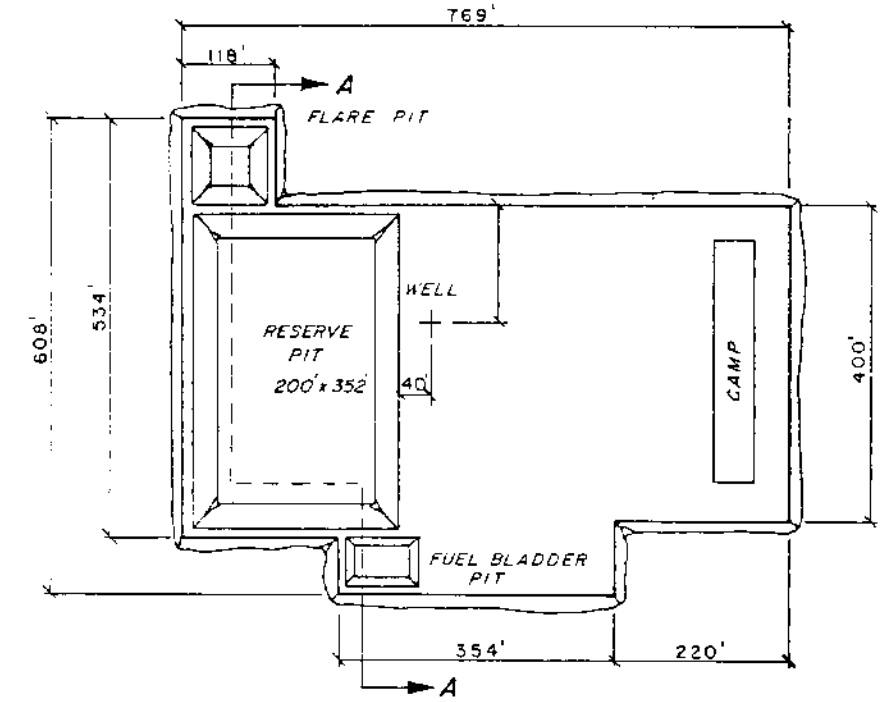
S. SIMPSON No. 1

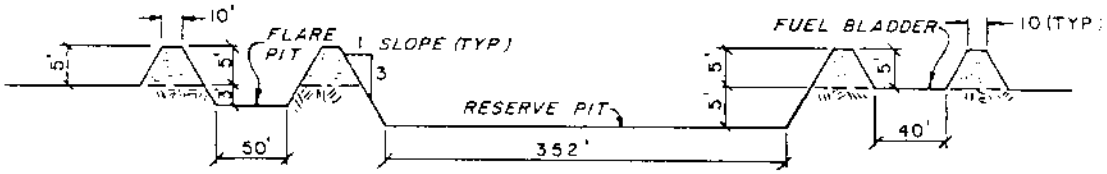
Located in
SE 1/4 PROTRACTED SEC. 22, T.17 N., R. 12 W., UMIAT MERIDIAN, AK

Surveyed for
HUSKY OIL
N.P.R. OPERATIONS INC.

Surveyed by
F. M. LINDSEY & ASSOC.
LAND & HYDROGRAPHIC SURVEYORS
2502 West Northern Lights Boulevard Box
Anchorage

S. SIMPSON NO. 1 DRILL SITE





SECTION A-A

DRILL PAD DRAWING

OPERATIONS HISTORY

DATE AND FOOTAGE DRILLED AS OF 6:00 A.M.	ACTIVITY
2/21/77	Rigging up. Have received 34 Herc loads. Set subbase, draw works, and three rig engines. Phone connected.
2/22/77	Rigging up. Set mud pumps; hooked up belts and guards. Set water and fuel tanks. Set generator, two boilers, welding shop, and parts house.
2/23/77	Rigging up. Rigged up fuel, water, steam, and electric lines; cleaned snow off location; unloaded mud. Worked on derrick. Have received total of 37 Herc loads.
2/24/77	Rigging up. Rigged up run-around; repaired sheave on crown; rigged up derrick; hooked up miscellaneous lines; set No. 2 rig generator. Have received 43 Herc loads.
2/25/77	Rigging up. Put derrick together; chained up compound; set one fuel tank; set mud house; hooked up pump suctions; installed shakers. Have received 50 Herc loads.
2/26/77	Rigging up. Have received total of 57 Herc loads. Worked on pits, pump, and derrick floor.
2/27/77	Rigging up. Set derrick on floor. Put all major equipment in place and hooked up same. Received 10,000 gallon fuel tanker.
2/28/77	Rigging up. Worked on engines, boilers, and air, steam, and mud lines.
3/1/77	Rigging up. Wrapped outside steam lines. Fired boilers. Repaired leaks. Worked on mud tanks; dressed derrick and raised same. Eighty percent rigged up.
3/2/77	Rigging up. Rigged up winterizing. Worked on boilers and mud pumps. Worked on mud lines and mud tanks. Set two 210-barrel water tanks. Eighty-four percent rigged up.

3/3/77	Rigging up. Rigged up winterizing. Worked on mud tanks, pumps, and steam heaters. Eighty-seven percent rigged up.
3/4/77	Rigging up. Worked on mud tanks, steam lines, and front of rig. Set mud loggers' shack; worked on choke manifold and catwalk. Ninety percent rigged up. Received three loads of cement (1,218 sacks). Also received casing tools and Schlumberger units.
3/5/77	Rigging up. Rigged up steam heater, desander, desilter, degasser, and 30" conductor pipe. Received eight loads of cement. Ninety-three percent rigged up.
3/6/77	Rigging up. Worked on mud tanks and filled them with water. Finished building mud line and rigged up floor. Ninety-five percent rigged up.
3/7/77	Rigging up. Worked on lightening mixers, shale shaker, desander, floor plates, rat and mouse holes, and flow line. Cemented 30" conductor with 360 sacks ArcticSet. Cement in place at 3:00 p.m., March 6, 1977. Top at 67' KB. Ninety-eight percent rigged up.
3/8/77	Rigging up. Worked on steam heaters, mud tanks, degasser and electric lines to mixers. Ninety-nine percent rigged up.
3/9/77	Rigging up. Finished work on mud tanks and repaired leaks; filled tanks and mixed mud. Cleaned rig and location. Rigged up derrick climber, geronimo line, and handrails on stairs. Picked up bottom-hole assembly. Drilled out cement. Spudded well at 8:00 a.m., March 9, 1977.
3/10/77 510'	Total Depth: 510'; Mud Weight: 9.5; Viscosity: 35. Finished drilling out cement to 95' KB. Circulated out cement. Drilled 17-1/2" hole to 510'. Dropped survey. Pulled out of hole. Changed bottom-hole assembly. Opened 17-1/2" hole to 26".
3/11/77 0'	TD: 510'; MW: 10.2; Vis: 40. Finished opening hole from 17-1/2" to 26". Circulated and conditioned hole. Pulled out of hole and laid down bit, sub, and hole opener. Rigged up and ran 12 joints of 20", 133#, 8rd casing. Shoe at 495' KB. Ran 5" drill pipe and stab-in tool. Would not latch in. Pulled out of hole and checked tool. Ran in hole and stab-in. Circulated and prepared to cement casing.

3/12/77 0'	TD: 510'. Circulated hole clean through stab-in tool. Cemented 20" with 1,200 sacks ArcticSet at 15-15.2 ppg. Returns of cement after mixing 900 sacks. Circulated to 14.2 ppg. Slightly gas cut. Displaced drill pipe with 7 barrels mud. Left 2 barrels (6') cement on top of shoe. Pulled out of hole. Cut off 30" and 20". Nippled up 20" head.
3/13/77 0'	TD: 510'; MW: 10; Vis: 35. Cut off 20" casing. Cleaned and dressed rough cut. Set 20", 2,000 pound weld on head, preheated and welded on. Weld cracked. Cut out weld and insulated casing. Preheated and welded again. Tested to 750 psi. OK. Picked up Hydril and nippled up.
3/14/77 20'	TD: 530'; MW: 9.5; Vis: 35. Nippled up 20" Hydril, kill line and flare line to pit. Tested Hydril to 1,000 psi. Laid down test plug. Rigged up drilling nipple and flow line and set in floor. Picked up bottom-hole assembly. Ran in hole to shoe. Thawed kelly. Drilled out shoe. Drilling ahead.
3/15/77 750'	TD: 1280'; MW: 9.1; Vis: 38. Drilled to 555'. Pulled out of hole. Picked up two 18-1/2" stabilizers. Ran in hole. Drilled to 796'. Circulated samples at 796'. Drilled to 950'; lost mud. Built volume and spotted pill. Drilled to 1280'. Lost 100 barrels mud.
3/16/77 805'	TD: 2085'; MW: 10.2; Vis: 48. Drilled to 1511', ran survey. Drilled to 1605'. Tripped for bit. Drilling ahead.
3/17/77 130'	TD: 2215'; MW: 10.0; Vis: 60. Drilled to 2215'. Circulated samples. Dropped survey; pulled out of hole. Tight hole from 800' to 1000'. Cleaned bit and stabilizers. Moved top stabilizer 14' above bit. Recovered survey. Could not fill hole. Hole was taking mud. Ran in hole to 1035'. Mixed and pumped lost-circulation material pill No. 1. Spotted 300 barrels to 750'. Mud slowly came up the hole. Had 25% returns for three minutes, then slowly dropped down hole. Mixed and pumped lost-circulation material pill No. 2. After 10 minutes, had 100% returns. Ran in hole and washed 50' to bottom. Circulated and conditioned hole.
3/18/77 0'	TD: 2215'; MW: 10.1; Vis: 65. Circulated and conditioned hole, lost returns. Pulled out of hole. Broke and laid down stabilizers; pulled jets from bit. Ran in hole to 1500'. Pumped lost-circulation material pill, got good returns. Ran in hole to bottom. Mixed

and pumped lost-circulation material and circulated hole. Pulled out of hole. Rigged up Schlumberger to run DIL and BHC/Sonic logs. Logs tagged up at 2187'. Lost four barrels mud while logging.

3/19/77
0'

TD: 2215'; MW: 10.1; Vis: 65. Finished running logs. Rigged down Schlumberger. Ran in hole to bottom; no fill. Circulated and conditioned mud. Pulled out of hole; chain out. Rigged up to run 16" casing. Ran 54 joints of 16", 84#, K-55, ST&C, 8rd casing. Shoe at 2175'; duplex float collar at 2090' KB. Rigged down casing tools.

3/20/77
0'

TD: 2215'. Picked up Dowell stab-in tool. Ran in hole. Stabbed in and circulated. Rigged up Dowell for cementing. Pumped 20 barrels water; mixed and pumped 2,000 sacks 15.2 ppg ArcticSet II cement. Good returns up to 1,750 sacks. Lost returns during last 250 sacks. Displaced with 36 barrels H_2O. Pulled out of hole. Ran in hole with 1" welded pipe to 220'. Pulled out of hole for sample. Cemented to 220'. Ran in hole with 1" pipe. Worked pipe past 220' to 360'.

3/21/77
0'

TD: 2215'. Rigged up Dowell. Pumped 40 barrels water; mixed and pumped 300 sacks ArcticSet II cement at 15.0 ppg. Pulled out of hole with 1"; laid down 1". Cleaned cellar. Picked up 20" Hydril. Set slips with 150,000 pound weight. Rough cut 16" casing and laid down same. Nippled down 20" Hydril; made final cut on casing. Installed 16", 3,000 psi wellhead and tested to 1,200 psi. Nippled up blowout preventer.

3/22/77
0'

TD: 2215'; MW: 9.6; Vis: 41. Nippled up 16" blowout preventer. Laid flare lines, gas-buster line. Worked on Koomey pump and hydraulic choke lines. Pressure tested choke manifold to 5,000 psi. OK. Rigged up hydraulic choke lines. Tested blind rams to 2,000 psi for 15 minutes. OK. Picked up bottom-hole assembly.

3/23/77
657'

TD: 2872'; MW: 10.0; Vis: 38. Finished picking up bottom-hole assembly. Ran in hole. Steel-line measured. Thawed out mud lines. Tested pipe rams and Hydril to 2,000 psi. OK. Tagged cement at 2091'. Drilled cement float collar and shoe to 2190'. Tested shoe bond to 300 psi (0.64 psi/ft. equivalent grade). OK. Drilled to 2750'. Repaired mud line. Drilled to 2872'. Drilling ahead.

3/24/77
573'

TD: 3445'; MW: 10; Vis: 43. Drilled to 3029'; circulated samples. Drilled to 3039'; circulated

	samples. Drilled to 3049'; circulated samples. Drilled to 3060'; circulated samples. Ran survey. Drilled to 3370'. Pulled out of hole for bit. Laid down 21 joints of 5" drill pipe. Picked up new bit; ran in hole. Drilled to 3445'. Repacked swivel and repaired gooseneck.
3/25/77 885'	TD: 4330'; MW: 10.1; Vis: 45. Finished repacking swivel. Drilled ahead. Repaired No. 1 pump clutch. Drilled ahead. Worked on pumps. Drilled ahead. Welded mud line. Drilled ahead.
3/26/77 600'	TD: 4930'; MW: 10.1; Vis: 45. Drilled to 4335'. Bit plugged. Tried to unplug same. Dropped survey. Tripped for bit. Drilled to 4868'; ran survey. Drilled to 4930'. Drilling ahead. Tuboscope on location.
3/27/77 310'	TD: 5240'; MW: 10.3; Vis: 47. Drilled to 5180'. Dropped survey. Pulled out of hole. Strung new drilling line. Ran in hole. Drilled to 5240'.
3/28/77 604'	TD: 5848'; MW: 10.3; Vis: 47. Drilled to 5279'. Lost circulation. Mixed lost-circulation material pill and spotted 5279-5100'. Lost ± 220 barrels. Gained back ± 150 barrels while drilling. Drilled to 5734'. Repaired rotary chain. Drilled to 5808'. Ran wireline survey. Drilled to 5848'. Tripped for bit.
3/29/77 283'	TD: 6131'; MW: 10.3; Vis: 46. Finished trip for bit. Laid down two 13-1/2" stabilizers. Drilled to 5965'. Lost circulation. Lost 439 barrels mud. Mixed and pumped lost-circulation material pill; spotted at 5880'. Regained circulation. Drilled to 6131'. Drilling ahead.
3/30/77 314'	TD: 6445'; MW: 10.1; Vis: 42. Drilled to 6232'; circulated samples. Drilled to 6242'; repacked swivel. Drilled to 6277'; circulated samples. Drilled to 6344'; circulated samples. Drilled to 6445'; dropped survey and pulled out of hole for bit.
3/31/77 0'	TD: 6445'; MW: 10.1; Vis: 42. Completed trip out. Tested blowout preventer. Tested Hydril to 1,500 psi. OK. Tested blind rams to 3,000 psi. OK. Pipe rams would not seat properly. Pulled them and found them to be 4-1/2". Pulled test plug; left 16" adapter in wellhead. Picked up stack and pulled adapter. Tripped in with Bit No. 9.

4/1/77 90'	TD: 6535'; MW: 10.3; Vis: 40. Tripped in to 5960'. Reamed and washed from 5960' to 6445' (tight hole). Conditioned mud. Drilled to 6535'. Circulated samples.
4/2/77 312'	TD: 6847'; MW: 10.3; Vis: 44. Drilling. Built mud volume while drilling. Tight hole on trip out. Pulled five stands with 50,000 pounds over string weight and pumped out one single on sixth stand. Remaining trip out OK.
4/3/77 68'	TD: 6915'; MW: 10.6; Vis: 42. Pulled out of hole. Changed pipe rams and tested to 3,000 psi. OK. Ran in hole; reamed 37' (5973-6010'). Reamed 63' (6784-6847'). Circulated bottoms up at 6847'. Drilled to 6915'. Drilling ahead.
4/4/77 187'	TD: 7102'; MW: 10.6; Vis: 47. Ten-stand short trip at 6980'. (Trip out OK. Had to ream from 6870' to 6980' on trip in.) Drilled ahead. Lost 50 barrels mud at 7020'. Spotted lost-circulation material pill and regained circulation. Bypassed shaker. Drilled to 7102' and tripped out. Twelfth, thirteenth and fourteenth stands pulled tight.
4/5/77 107	TD: 7209'; MW: 10.7; Vis: 47. Steel-line measure out; no connection. Drilled to 7209'. Circulated. Short trip (15 stands). Trip out OK. Reamed 20' back to bottom. Hole in good condition. Circulated for logs at 7209'.
4/6/77 0'	TD: 7209'; MW: 10.7; Vis: 47. Tripped out and rigged up Schlumberger. Ran DIL, BHC/Sonic/GR, FDC/CNL/GR. Reran FDC/CNL. Now running HRD. Wireline total depth: 7209'.
4/7/77 0'	TD: 7209'; MW: 10.6; Vis: 47. Finished running HRD. Attempted 27 sidewall cores; recovered 25; 2 empty. Ran in hole; 20' fill. Circulated. Made 15-stand short trip; 10' fill. Circulated. Pulled out of hole. Rigged up to run 10-3/4" casing. Changed pipe rams. Ran 10-3/4" casing.
4/8/77 0'	TD: 7209'; MW: 10.6; Vis: 47. Ran 182 joints of 10-3/4", 60.7#, P-110, 8rd casing. Set at 7125'; float at 7035'; FO at 2011'; FO at 1928'. Cemented with 1,000 sacks Class "G": 0.2% D-13R, 0.75% D-65. Cement in place at 10:45 p.m. One hundred percent returns.

4/9/77 0'	TD: 7209'; MW: 10.6; Vis: 47. Tested bottom seals to 3,000 psi OK. Nippled up blowout preventer and choke manifold.
4/10/77 250'	TD: 7459'; MW: 10.2; Vis: 42. Tested blinds, pipe rams, and choke manifold to 5,000 psi. OK. Tested Hydril to 3,000 psi. OK. Steel-line measured top cement at 7112'; float collar at 7117'. Tested casing to 3,000 psi. OK. Shoe at 7206'. Drilled to 7220'. Tested FM to 0.62 psi/ft. OK. Correct casing: 182 joints. Shoe at 7206'; float collar at 7117'; FO at 2093'; FO at 2010'.
4/11/77 56'	TD: 7515'; MW: 10.3; Vis: 47. Lost two cones in hole from Bit No. 12. Ran in hole with bit and junk basket. Drilled on junk from 7472' to 7494'. Pulled out of hole. Recovered part of cone and bearings. Ran Bit No. 14. Drilling ahead.
4/12/77 291'	TD: 7806'; MW: 10.4; Vis: 50. Hole OK on trip. Drilling ahead.
4/13/77 233'	TD: 8039'; MW: 10.3; Vis: 41. Pulled ten-stand short trip at 7931'. No tight hole. Drilling ahead.
4/14/77 193'	TD: 8232'; MW: 10.4; Vis: 48. Worked on No. 1 mud pump. Drilled to 8228'; circulated samples. Drilled to 8232'; dropped survey. Pulled out of hole for bit.
4/15/77 194'	TD: 8426'; MW: 10.5; Vis: 48. Finished trip at 8232'. Reamed last 50' to bottom (8182-8232'). Drilled to 8426'. Drilling ahead.
4/16/77 0'	TD: 8426'; MW: 10.5; Vis: 48. Tripped out. Bit 1" out of gauge; part of tong die in junk basket. Tripped in with bit to ream. Reamed 8335' to 8426'. Tripped for bit. (Washed area 8175' to 8335' to wash down possible junk accumulation. Recovered part of tong die, bearings, and inserts in junk basket.)
4/17/77 168'	TD: 8594'; MW: 10.5; Vis: 44. Completed trip in. Drilling ahead.
4/18/77 148'	TD: 8742'; MW: 10.5; Vis: 46. Drilling ahead.
4/19/77 53'	TD: 8795'; MW: 10.5; Vis: 46. Drilled to 8744'. Worked on pump. Drilled to 8749' and tripped for bit. Washed and reamed 85' to bottom. Drilled to

	8795'. Circulated for logs. Pulled out of hole. Rigged up Schlumberger. Ran DIL (Wireline total depth: 8804').
4/20/77 0'	TD: 8795'; MW: 10.5; Vis: 46. Logging. Ran DIL, FDC/CNL, BHC/Sonic, HRD, Velocity, Sidewall Cores (shot 19, recovered 13), VDL/CBL. Logging total depth: 8804' (Schlumberger).
4/21/77 0'	PBTD: 7160'; MW: 10.5; Vis: 46. Finished VDLCBL. Tripped in with bit and circulated. Pulled out of hole and laid down 13 drill collars, shock sub, jars, and crossover. Tripped in open-ended to 8250'. Spotted 70-sack Class "G" plug from 8250' to 8050'. Cement in place at 3:40 a.m. Picked up and circulated at 5:15 a.m. Picked up to 7100' and circulated.
4/22/77 0'	PBTD: 7000'; MW: 10.4; Vis: 46. Pulled out of hole. Picked up bit and casing scraper. Tripped in to 7048' and circulated. Pulled out of hole. Ran retainer on drill pipe and set at 7000'. Tested to 2,500 psi. OK. Tripped out and laid down 40 joints of drill pipe. Rigged up Schlumberger. Tested lubricator to 500 psi. OK. Ran 20' perforating gun.
4/23/77 0'	PBTD: 7000'; MW: 10.5; Vis: 46. Perforated with Schlumberger's 4" Hyper Jet at 4 shots per foot, 6522' to 6568'. Tripped in with drill-stem test tools and set packer at 6447'. Opened tool at 4:43 p.m. Strong blow on initial flow: 31 minutes initial shut-in. Opened for final flow at 5:30 p.m. Gas to surface in 10 minutes; slight flare. Estimated flow: 75 MCFD. Shut-in for four hours. Recovered 500' water cushion and 1215' muddy salt water. Pulled packer loose and tripped out. Ran retainer.
4/24/77 0'	PBTD: 6420'; MW: 10.5; Vis: 46. Set 10-3/4" Howco EZ drill retainer at 6420'. Injection rate: 5 BPM at 750 psi. Squeezed 90 sacks Class "G" with 0.75% D-65 + 0.2% D-13R. Spotted 10 sacks on top of retainer. Initial drill pipe shut-in pressure: 900 psi. Cement in place at 9:45 a.m. Circulated. Pulled out of hole. Rigged up Schlumberger and tested lubricator to 500 psi. OK. Perforated at 4 shots per foot (Hyper Jet II) 6231-6241', 6211-6220', 6183-6202'. Ran drill-stem test tools. Set packer at 6108'. Fifteen minutes initial flow: light to very light blow. Two hours final flow: light to very light blow. Dead after 23 minutes. Dropped bar and reversed out during two-hour final shut-in. Recovered 705' of watery mud with some gas cutting. Sample chamber contained 2,200 cc of gas-cut mud and trace of oil sheen. Tripped out with drill-stem test tools.

4/25/77 0'	PBTD: 6070'; MW: 10.5; Vis: 46. Tripped in with Howco EZ drill retainer on drill pipe and set at 6080'. Established injection rate: 5 BPM at 1,200 psi. Squeezed with 100 sacks Class "G" with 0.75% D-65 + 0.2% D-13R. Left last 10 sacks on top of retainer. Initial drill pipe shut-in pressure: 1,500 psi. Cement in place at 2:15 p.m. Circulated. Pulled out of hole. Rigged up Schlumberger. Tested lubricator to 500 psi. OK. Perforated with 4" Hyper Jet II at 4 shots per foot, 5903-5946', 5846-5856', 5807-5816'. Ran drill-stem test tools. Set packer at 5732'. Running Drill-Stem Test No. 3. Recovered 4 barrels rat-hole mud and 500' water cushion with trace of gas.
4/26/77 0'	PBTD: 5690'; MW: 10.5; Vis: 46. Completed Drill-Stem Test No. 3. Set 10-3/4" EZ drill retainer at 5700' on drill pipe. Established injection rate: 5 BPM at 900 psi. Squeezed with 100 sacks Class "G" with 0.75% D-65 + 0.2% D-13R. Left last 10 sacks on top of retainer. Initial drill pipe shut-in pressure: 800 psi. Cement in place at 6:55 p.m. Circulated. Laid down drill pipe. Pulled out of hole. Changed out blowout-preventer spool in preparation to cut and pull casing.
4/27/77 0'	PBTD: 5690'; MW: 10.5; Vis: 46. Nippled up blowout preventer. Ran casing cutter and cut 10-3/4" casing at 2115'. Dulled knives on first run. Completed cut with second set. Pulled 10-3/4" slips with spear (100,000 pound pull). Changed rams to 10-3/4". Removed drilling nipple. Rigged up casing tools.
4/28/77	PBTD: 1933'. Laid down 54 joints plus cut off of 10-3/4" casing and two FOs (2100.88'). Laid down drill collars. Tripped in to 2005'. Mixed and pumped 70 sacks ArcticSet II cement with water spacers ahead and behind (15.8 ppg). Pulled out of hole to 1795'. Reversed out mud with water. Well flowing back. Pumped mud down drill pipe and circulated out water. Weighting up to 10.5 ppg.
4/29/77	PBTD: 1805'. Circulated and weighted up. Lost 330 barrels mud. Regained circulation. Equalized system; circulated and conditioned. Gas-cut mud. Ran in hole to 2020' (casing stub). Picked up to 2005'. Circulated and observed well to make sure hole would stand full. Rigged up to cement. Mixed and pumped 300 sacks Class "G" with 2% Calcium Chloride with three barrels water spacers ahead and behind. Down squeezed 85 sacks around stub (10-3/4" x 16" annulus) at 250 to 200 psi. Spotted 215 sacks above

stub with full returns. Pulled out of hole to 1597'. Reversed out slight trace of cement. Waited on cement. Cement in place at 4:00 a.m.

4/30/77 — PBTD: Surface. Rigging down. Waited on cement. Tagged top of cement plug at 1858'. Firm. Laid down drill pipe. Ran in hole to 500'. Mixed and pumped 500 sacks Class "G" with 2% Calcium Chloride (three barrels water ahead and behind). Pulled out of hole. Laid down remaining drill pipe. Set surface plug (21 sacks) of ArcticSet II cement in top 20'. Rig released at 3:00 a.m., April 30, 1977.

5/1/77 — Rigging down and stacking out. Cleaned mud tanks, rigged down floor and windwalls. Broke out mud tanks. Prepared to lower derrick. Cleaned out all pumps.

5/2/77 — Rigging down and stacking on location.

5/3/77 — Completed rigging down. Stacked out on pad. Pulled piling caps.

5/4/77 — Completed stacking. Demobilized support equipment. Cleaned location.

5/5/77 — Demobilized support equipment to Deadhorse. Cleaned location.

DRILLING TIME ANALYSIS

SOUTH SIMPSON NO. 1

NABORS ALASKA DRILLING, INC., RIG 1

Spud 3/9/77; Rig Released 4/30/77

Total Depth: 8,795 Feet

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH SIMPSON NO. 1 Page 1 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
1977 2-12																							12		Setting Up Camp
2-13																							12		Setting Up Camp
2-14																							12		Setting Up Camp
2-15																							24		Setting Up Camp
2-16																							24		Setting Up Camp
2-17																							24		Setting Up Camp
2-18																							24		Setting Up Camp
2-19																							24		Setting Up Camp
2-20	24																							Rigging Up	
2-21	24																							Rigging Up	
2-22	24																							Rigging Up	
2-23	24																							Rigging Up	
2-24	24																							Rigging Up	
2-25	24																							Rigging Up	
2-26	24																							Rigging Up	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH SIMPSON NO. 1 Page 2 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
2-27	24																							Rigging Up	
2-28	24																							Rigging Up	
3-1	24																							Rigging Up	
3-2	24																							Rigging Up	
3-3	24																							Rigging Up	
3-4	24																							Rigging Up	
3-5	24																							Rigging Up	
3-6	24																							Rigging Up	
3-7	24																							Rigging Up	
3-8	24																							Rigging Up	
3-9	6	8½		6½				3																Drilling out Cement	Spudded well.
3-10			9					2		13														Reaming	
3-11								3		6	15													Circulating	Ran 20" Casing.
3-12											3	21												Nipple Up 20" Head	
3-13												18	1									5		Nipple Up on 20" Casing	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH SIMPSON NO. 1 Page 3 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
3-14		11		3½				6½															3	Drilling	
3-15		16¾		6	¾		½																	Drilling	
3-16		8½		4½			¾	10¼																Drilling	
3-17			¼	12				11	¾															Circulating and Conditioning	
3-18				4½			1	1½	8⅛	8¾														Logging	Ran Schlumberger Logs
3-19								5½		18½														Rigging Down Casing Tool	Ran 16" Casing.
3-20										17	7													Working 1" pipe to 360'	
3-21													24											Nipple upon 16" Casing	
3-22		8		6									4	3									3	Changing BHA	
3-23		14		4	1		2	3																Drilling	
3-24		12½		2½			9																	Replacing Swivel And Repairing Gooseneck	
3-25		14		7½	¼																		2¼	Drilling	
3-26		12		6	1																		5	Drilling	
3-27		15¼		3			¼	3															2	Drilling	
3-28		8		10¼	1	¼	1¼	3¼																Trip Out For Bit	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH SIMPSON NO. 1 Page 4 of 6

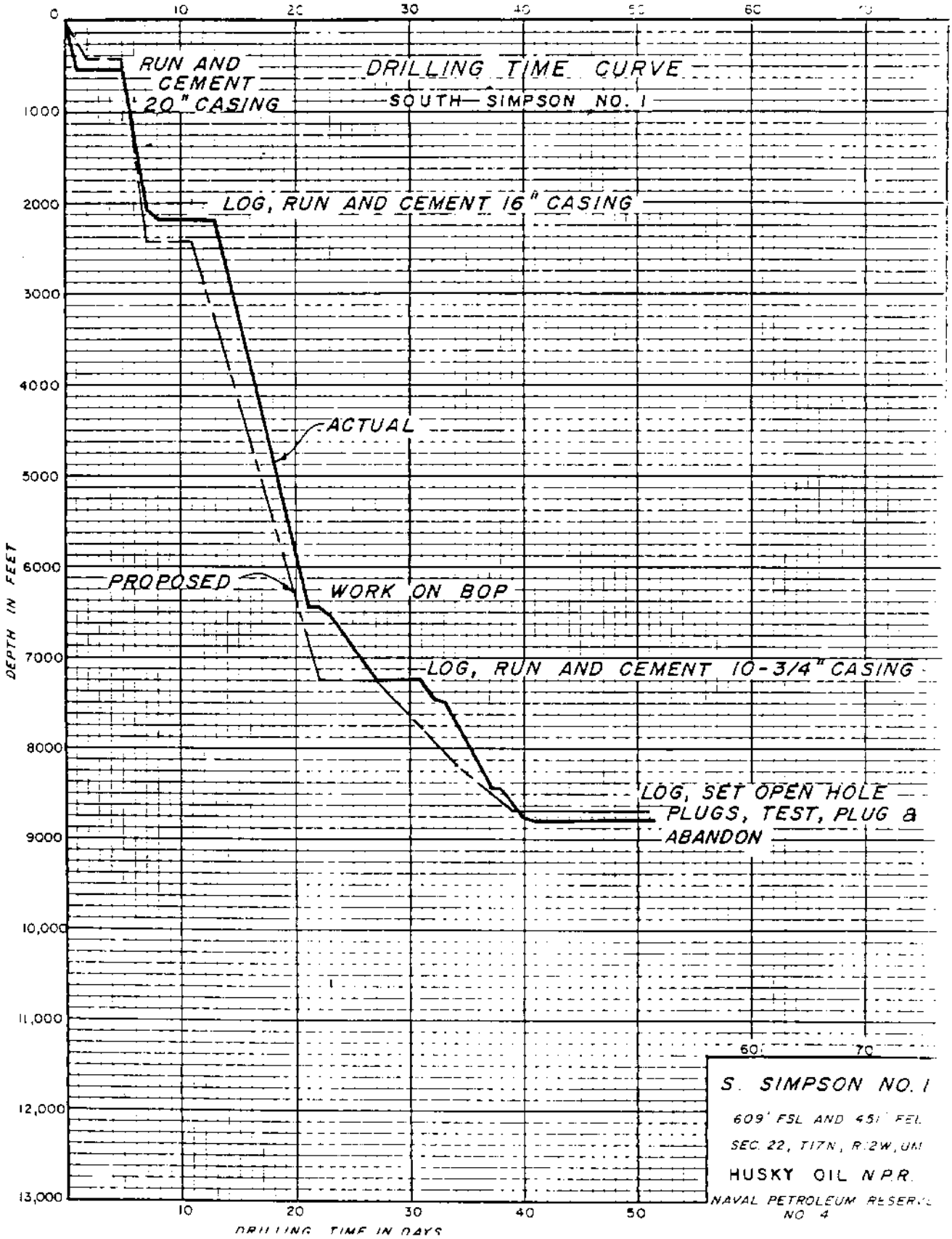
DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
3-29		16					2½	5½																Drilling	
3-30		4½		3½	½			¾					14¾											Trip Out for Bit	
3-31			5½	4				11				3½												Trip In	
4-1		20½			¾			2 ¾																Circulating	
4-2		2½		9¼	½			5				6¾												Trip Out for Bit	
4-3		19½		1¼			¼	3																Drilling	
4-4		13¼		7¾	½			¾														1½		Trip Out	
4-5			¼	4½	½		½	4¾	13															Circulating	
4-6				7¼				5¼	10½													1		Logging	Ran Schlumberger Logs
4-7										22½		1½												Running 10 3/4" Casing	
4-8											11	13												Waiting on Cement	
4-9		5		8								4										7		Nipple Up	Waiting on Cement
4-10		9½	1¼	6¾	½	½		1¼														3¼		Drilling	
4-11		14¼		8	½		½															¾		Drilling	
4-12		22		1			1																	Drilling	

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH SIMPSON NO. 1 Page 5 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
4-13		23½					½																	Drilling	
4-14		14½	1½	6½	½			1																Trip Out For Bit	
4-15		5½	9¼	8½	½		¼																	Drilling	
4-16		15		5½			3½																	Trip In with New Bit	
4-17		23¼					¼																	Drilling	
4-18		15¼	1	5½	½		¼	1½																Drilling	
4-19				3					21															Logging	Ran Schlumberger Logs
4-20				9		½	1	5¼	8				¼											Logging	
4-21				14		½	2¼	5					¼						2					Circulating	
4-22				9½					6									8½						Perforating	DST No. 1
4-23				12½				4¾	4	1								1¾						Trip In	
4-24				7¼				5¼	4¼									4		1			1	POH with DST No. 2	Time Change. DST No. 2
4-25				4				5¼										12		1			1	Running DST	DST No. 3
4-26				4								17	1½										1½	Changing out BOP Spool	
4-27				3				2		11½		1							2				4	Rigging Up Casing Tools	Cut 10-3/4" Casing.

DRILLING TIME ANALYSIS (HOURS) - HUSKY NPR OPERATIONS, INC. SOUTH SIMPSON No. 1 Page 6 of 6

DATE	RIG UP/RIG DOWN	DRILLING	REAMING	TRIP	DEV. SURVEY	RIG MAINT.	RIG REPAIR	CIRC. & COND. MUD	LOGGING	CASING & CEMENT	W O C	NIPPLE UP/DOWN BOP	TEST BOP	CHANGE BHA	LOST CIRC.	FISHING	CORING	DST	PLUG BACK	SQUEEZE CEMENT	DIR. WORK	W O MAT./EQUIP.	OTHER	Operations at 6:00 a.m.	Comments
4-28								24																Circulating	
4-29				3				¾		3	11⅛	3½							1½				1	Waiting on Cement	
4-30	21																		3					Rigging Down	Rig Released at 3:00 a. m.
5-1	24																							Rigging Down	
5-2	24																							Rigging Down	
5-3																							24	Stacking out Rig	
5-4																							24	Cleaning Up Location	
5-5																							24	Demobilizing	
	483	29		9⅛		27½		76¼		47¼		20¼		-0-		-0-			8½		-0-		270		
TOTAL HOURS	354			234⅛		1¾		147⅛		101		117¼		-0-		-0-		27		2		-0-			


DRILLING TIME CURVE
SOUTH— SIMPSON NO. 1
RUN AND CEMENT 20" CASING
LOG, RUN AND CEMENT 16" CASING
ACTUAL
PROPOSED
WORK ON BOP
LOG, RUN AND CEMENT 10-3/4" CASING
LOG, SET OPEN HOLE PLUGS, TEST, PLUG & ABANDON
DEPTH IN FEET
DRILLING TIME IN DAYS
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10,000
11,000
12,000
13,000
10
20
30
40
50
60
70
S. SIMPSON NO. 1
609' FSL AND 451' FEL
SEC. 22, T17N, R12W, UM
HUSKY OIL N.P.R.
NAVAL PETROLEUM RESERVE NO. 4

IMCO SERVICES

A Division of HALLIBURTON Company

IMCO REPRESENTATIVE Jack Adams/Ed Flake

TYPE MUD Gel-Water

RECORD OF DRILLING MUD TESTS

CASING	HOLE SIZE	NO BITS	NO DAYS
@			
@			
@			
@			
@			

OPERATOR: HUSKY OIL NPR OPERATIONS, INC.

WELL NAME & NO: S SIMPSON NO 1

API WELL NO	STATE	COUNTY	WELL	S/T
	50	279	20001	

FIELD: NPRA — COUNTY: N. Slope — STATE: Alaska

CONTRACTOR: NABORS Alaska Drilling — Sec 22 — T 17N — R 12W

DATE '77	DEPTH	WEIGHT lb/gal	VISC sec	PLASTIC VISC cp	YIELD POINT lb/100 sq ft	GEL STRENGTH 10 sec / 10 min	pH	FILTRATE cc	CAKE 32nd in	ALKALINITY Pf	ALKALINITY Mf	ALKALINITY Pm	CHLORIDES mg/l	CALCIUM mg/l	SAND % vol	SOLIDS % vol	OIL % vol	WATER CONTENT % vol	METHYLENE BLUE lb/bbl	METHYLENE BLUE kg/m³
3-9	0	8.4	32	6	3	2 4	9.6	24		2	.6	.9		600	nil	nil	3		97		
3-10	510	9.5	35	5	19	7 8	9.5	48		3	.3	.4		2700	440	3/4	7		93		
3-11	510	10.2	40	6	23	10 14	8.5	51		3	.1	.2		2800	500	1½	11		89		
3-12	500	10.2	40	6	23	10 14	8.5	51		3	.1	.2		2800	500	1½	11		89		
3-13	500	10	35	5	16	8 12	8.5	50		3	1	.15		2700	560	1½	10		90		
3-14	510	9.5	35	4	13	7 7	8.5	50		3	.1	1.5		2700	560	tr	7		93	4	20
3-15	935	9.1	38	9	7	4 12	11	14.8		2	.1	1.2		1400	nil	1	6		94	4	20
3-16	1882	10.2	48	12	8	4 10	10.5	10		2	.4	.6		1300	nil	1	8		92	4	20
3-16	2103	10.0	60	20	16	4 11	11.0	9		2	.5	.7		1300	nil	1.4	18		82	7	35
3-17	LCM																				
3-18	2215	10.1	65	20	12	4 11	11.0	8		2	.5	.7		1350	nil	1¼	18	nil	82		
3-19	2215	10.1	65	20	12	4 11	11.0	8		2	.5	.7		1350	nil	1¼	18	nil	82		
3-20	2215	9.6	41	20	12	4 10	10 0	8		2	.3	.6		1350	nil	1¼	18	nil	82		
3-21	2215	9.6	41	20	12	4 10	10.0	8		2	.3	.6		1350	nil	1¼	18	nil	82		
3-22	2215	9.6	41	20	12	4 10	10.0	8		2	3	.6		1350	nil	1¼	18	nil	82		
3-23	2807	10.0	38	10	2	2 6	9.0	10		2	.3	.7		1100	nil	3/4	10	nil	90		
3-24		10.0	38	11	2	2 6	9.0	10		2				1100	nil						
4AM	3420	10.0	43	14	5	3 6	9.5	7		2	2	.7		600	nil	¼	10	nil	90		

FORM 514

IMCO SERVICES

A Division of HALLIBURTON Company

Page 2

RECORD OF DRILLING MUD TESTS

CASING @ ____ HOLE SIZE ____ NO BITS ____ NO DAYS ____

IMCO REPRESENTATIVE ____

TYPE MUD ____

OPERATOR: HUSKY OIL NPR OPERATIONS, INC.

WELL NAME & NO: S SIMPSON NO 1

API WELL NO	STATE	COUNTY	WELL	S/T
	50	279	20005	

FIELD: NPRA — COUNTY: N. Slope — STATE: Alaska

CONTRACTOR: NABORS Alaska Drilling — Sec 22 — T 7N — R 12W

DATE 1977	DEPTH ft	WEIGHT lb/gal	VISCOSITY sec	PLASTIC VIS cp	YIELD VALUE lb/100 sq ft	GEL STRENGTH 10s / 10m	pH	FILTRATE ml	FILTER CAKE 32nds in	ALKALINITY Pf	ALKALINITY Mf	ALKALINITY Pm	SALT CHLORIDE ppm	CALCIUM ION ppm	SAND % vol	SOLIDS % vol	OIL % vol	WATER CONTENT % vol	METHYLENE BLUE	
3-24	3467	10.2	50	16	8	2 6	9.0	6 4	2						½	9	nil	91		
6PM		10.3	48	16	5	2 6	9.5	6.2	2	.2	.7		600	nil	¼	12	nil	82		
3-25		10.1	45	16	7	2 6	9.5	6.0	2	.2	.7		600	nil	¼	10	nil	90		
3-26	4740	10.1	45	16	9	2 6	9.5	4.4	2	.2	.7		600	nil	tr	9	nil	91		
3-27	5180	10.3	47	15	5	3 6	9.5	4.7	2	.2	.7		600	nil	tr					
3-28	5800	10.3	47	17	8	2 7	9.5	5.0	2	1	.5		500	nil	tr	12	nil	88		
3-29	6000	10.3	46	13	7	3 6	9.5	4.2	2	.2	.7		500	nil	tr	12	nil	88		
3-30	6270	9.9+	41	16	8	2 3	8.5	5	2	.1	.8		800	40	tr	12		88	5	25
3-31	6443	10.1	42	12	5	2 4	8.3	5	2	.1	.8		800	40	tr	12		88	5.5	27 5
4-1	6525	10.3+	40	12	5	2 2	9	5.8	2	.35	1.4		800	40	¼	12		88	5.5	27.5
4-2	6847	10.3+	44	19	9	2 4	10	5.8	2	.6	1.7		800	40	¼	11		89	5	25
4-3	6910	10.6+	42	19	7	2 4	9.5	4	2	.4	1.4		800	40	¼	12		88	5	25
4-4	7102	10.6+	47	22	10	2 6	10	5.2	2	.8	2.3		800	nil	3½ (LCM)	13		87	5	25
4-5	7209	10.7	47	24	16	3 7	10.5	5	2	1.1	.3		800	nil	1	13		87	5	25
4-6	7209	10.7	47	24	16	3 7	10.5	5	2	1.1	.3		800	nil	1	13		87	5	25
4-7	7209	10.6+	47	26	11	3 6	10.5	5.2	1	2.6			800	nil	1	12		88	5.5	27.5
4-8	7209	10.6	47	26	11	3 6	10.5	5.2	2	.1	2.6		800	nil	1	12		88	5.5	27.5
4-9	7209	10.6	47	26	11	3 6	10.5	5.2	2	.1	2.6		800	nil	1	12		88	5.5	27.5
4-10	7446	10.2	42	14	7	2 8	11.5	7.6	2	1.5	2.6		1000	nil	¼	10		90	5	25

FORM 5-4

IMCO SERVICES

A [illegible] of HALLIBURTON Company

RECORD OF DRILLING MUD TESTS

OPERATOR: HUSKY OIL NPR OPERATIONS, INC.

WELL NAME & NO: S SIMPSON #1

API WELL NO	STATE	COUNTY	WELL	S/T
	50	279	2001	

FIELD: NPRA — COUNTY: N. Slope — STATE: Alaska

CONTRACTOR: NABORS Alaska Drilling — Sec 22 — T 17N — R 12W

CASING @ ____ HOLE SIZE ____ NO BITS ____ NO DAYS ____

IMCO REPRESENTATIVE ____

TYPE MUD ____

DATE '77	DEPTH ft	MUD WT ppg	VIS sec	PLASTIC VISC cp	YIELD POINT lb/100 ft²	GEL STRENGTH 10 sec/10 min	pH	FILTRATE cc	TEMP HT FILTRATE 500 psi °F	CAKE 32nd in	ALKALINITY Pm	ALKALINITY Mf	ALKALINITY Pf	CHLORIDE ppm	CALCIUM ppm	SAND % vol	SOLIDS % vol	OIL % vol	WATER CONTENT % vol	METHYLENE BLUE meq/ml	METHYLENE BLUE lb/bbl
4-11	7505	10.3	47	20	13	3 10	11.5	5		2	1.1	2.3		900	nil	1/4	11		89	5	25
4-12	7802	10.4	50	24	12	2 8	10	4.2		2	.5	1.3		800	nil	1/4	12		88	5.5	27.5
4-13	8035	10.3	41	18	11	3 6	10	4.2		2	2	.7		800	nil	tr	12	nil	88	5	25
4-14	8226	10.4	48	24	13	3 6	10.5	3.6		2	.2	.8		800	nil	tr	11	nil	89		
4-15	8418	10.5	48	18	8	3 6	10.5	4.0		2	.4	.9		750	nil	tr	12	nil	77	5	25
4-16	8428	10.5	48	18	8	3 6	10.5	4.0		2	.4	9		750	nil	tr	12	nil	88		
4-17	8587	10.5	44	21	11	3 6	10.5	4.0		2	.5	.9		750	nil	tr	11	nil	89		
4-18	8740	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-19	8801	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-20	8801 (Logging)	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	8	nil	91		
4-21	8801	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-22	8801	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-23	-	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-24	-	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-25	-	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-26	-	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		
4-27	-	10.5	46	24	11	3 6	10.5	4.0		2	.5	1.4		750	nil	tr	9	nil	91		

FORM 514

BIT RECORD

Husky Oil NPR Operations, Inc.
South Simpson No. 1
SE1/4, Section 22, T17N, R12W, U.M.

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SER NO OF BIT	JET SIZE 1	2	3	DEPTH OUT	FTGE.	HRS RUN	ACC. HRS.	FT. PER HR	WT. ON BIT 1000 LBS	ROTARY R.P.M.	VERT DEV	PUMP PRESS	PUMPS LINER	SPM	MUD WT.	VIS	DULL CODE T	B	G
1	17½	Reed	Y-11-J	100294	N	o n	e	510	443	10.5	10.5	42.1	20	92	1/2°	200	60	6.5	9.5	35	4	4	I
HO	26	Sec.	H-O					510	443	8	18.5	55.3	20	92	1/2°	200	60	6.5	9.5	35	1	1	I
2	18½	HTC	OSC3AJ	WX326	18	18	18	1605	1105	24.5	43	45.1	45	105	3/4°	700	65	6.5	10.2	48	6	6	I
3	18½	HTC	OSC3AJ	DL707	18	18	18	2215	610	11.75	54.75	51.9	45	105	3/4°	700	65	6.5	10	60	2	4	I
4	13½	HTC	OSC3AJ	SR308	14	14	14	3370	1155	21	75.75	55.0	55	152	3/4°	1800	63	6.5	10	45	6	5	I
5	13½	Reed	Y11J	309712	12	12	12	4335	965	20.75	96.50	46.5	55	150	1°	2400	6½	63	10.1	45	3	4	I
6	13½	HTC	OSC3AJ	SR307	12	12	13	5180	845	19.50	116	43.3	65	110	3/4°	2200	6½	63	10.2	47	4	5	I
7	13½	HTC	OSC3AJ	SP851	12	12	13	5848	668	19.75	135.75	33.8	65	110	1¼°	2300	6½	63	10.3	47	6	7	I
8	13½	HTC	OSC3AJ	SR360	12	12	13	6445	597	25.0	160.75	23.8	45	120		2300	6½	63	10.3	47	5	8	I
9	13½	HTC	OSC3AJ	SP852	12	12	13	6847	402	23.0	183.75	17.4	50	120	1¼	1600	6½	56	10.6	43	5	8	I
10	13½	HTC	OSC3AJ	SP849	15	15	15	7102	255	22.5	206.25	11.3	45	120	3/4°	1600	6½	56	10.7	43	5	7	I
11	13½	HTC	OSC3AJ	SP846	15	15	15	7209	107	10.75	217	9.95	45	120	1°	1600	6½	56	10.7	47	3	4	I
12	8½	HTC	X3A	XX991	12	12	12	7472	263	12.25	229.25	21.46	35	60	3/4°	1500	6½	58	10.3	47	-	-	-
13	8½	Reed	S316J	320694	13	13	13	7494	22	2.25	231.50	9.77	35	60	3/4°	1500	6½	58	10.3	47	6	1	I
14	8½	HTC	X1G	RN247	13	13	13	7672	178	7.25	238.75	24.50	35	60	1°	1800	6½	50	10.4	50	6	5	I
15	8½	Smith	F-2	970FV	12	12	12	8232	560	56.75	295.5	9.86	45	45	1/4°	1800	6½	50	10.4	48	4	7	1/8
16	8½	Smith	F-2	660EE	9	9	10	8426	194	15.75	311.25	12.31	40	45	1°	2300	5½	50	10.5	48	8	8	I
17	8½	Reed	S316J	320677	12	12	12	8426	91	9.25	-	-	10	45	1°	1800	5½	60	10.5	48	6	7	I
18	8½	Smith	F-3	798HK	9	10	10	8749	323	45.75	357	7.06	45	45	1°	2400	5½	58	10.5	46	7	5	1/8
19	8½	Smith	3JS	DD-074	10	10	10	8795	46	7.75	364.75	5.93	45	45	-	2300	5½	58	10.5	46	2	2	I

INTRODUCTION

The casing program for South Simpson No. 1 was designed to provide maximum protection while drilling and evaluating the well. Casing purchased by the U. S. Navy prior to Husky's involvement on NPR-4 was utilized when possible to reduce on-hand inventories. The casing was programmed as follows: 30" conductor at 100'±; 20" surface casing at 500'; 16" casing at 2500'; 10-3/4" casing at 7100'; 7" liner run to a total depth of 8670' if needed for testing purposes. Actual casing run was 30" conductor at 95'; 20" surface casing at 495'; 16" casing at 2175'; and 10-3/4" casing at 7206'. The use of a 7" liner was not necessary. The 10-3/4" casing was cut at 2015' and recovered back to the surface. The well was plugged back to the surface inside the 16" casing when abandoned.

CASING OR LINER CEMENT JOB

Lease Naval Petroleum Reserve No.4 Well So. Simpson No. 1 Date March 12, 1977

Size Casing 20" Setting Depth 495' Top (liner hanger) _____

Hole Size 26" Mud Gradient .53 psi/ft (10.2 ppg) Viscosity 40

Casing Equipment

Dowell duplex shoe. _____ float located _____ feet

above shoe. _____ (DV, FO) collars located at _____ feet

and _____ feet

_____ centralizers located _____

_____

_____ scratchers located _____

_____

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets, etc.) _____

_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
1	1200	Dowell	Arcticset		15.0-15.2	1380 cu ft
2						

Cement through (DV, FO) Collar at _____ feet

	No Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
3						
4						

CASING OR LINER CEMENT JOB

Lease Naval Petroleum Reserve No. 4 Well So. Simpson No. 1 Date March 19, 1977

Size Casing 16" Setting Depth 2175' Top (liner hanger) _____

Hole Size 18 1/2" Mud Gradient .52 psi/ft (10.1 ppg) Viscosity 65

Casing Equipment

Dowell shoe Dowell duplex float located 85 feet

above shoe. _____ (DV, FO) collars located at _____ feet

and _____ feet

_____ centralizers located _____

_____

_____ scratchers located _____

_____

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets etc.) _____

_____

Cement (around shoe)

	No Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	2000	Dowell	Arcticset		15.2	2300 cu ft
(2)	300	Dowell	Arcticset (top job)		15.0	345 cu ft

Cement through (DV, FO) Collar at _____ feet

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(3)						
(4)						

CASING TALLY
SUMMARY SHEET

DATE: April 7, 1977

FIELD Naval Petroleum Reserve No. 4 LEASE & WELL NO. South Simpson No. 1 TALLY FOR 10 3/4" CASING

SUMMARY OF PAGE MEASUREMENTS			
	NO OF JOINTS	FEET	00'S
PAGE 1			
PAGE 2			
PAGE 3			
PAGE 4			
PAGE 5			
PAGE 6			
PAGE 7			
PAGE 8			
PAGE 9			
TOTAL			

SUMMARY OF DEPTH CALCULATIONS				
		NO. OF JOINTS	FOOTAGE FEET	00'S
1	TOTAL CASING ON RACKS	188	7457	80
2	LESS CASING OUT LIES NOS.			
3	TOTAL (1 - 2)			
4	SHOE LENGTH		1	83
5	FLOAT LENGTH		1	58
6	MISCELLANEOUS EQUIPMENT LENGTH		7	54
7	TOTAL CASING AND EQUIPMENT FROM CEMENT HEAD (3 + 4 + 5 + 6)		7212	44
8	LESS WELL DEPTH (KB REFERENCE)		22	50
9	"UP" ON LANDING JOINT		6	50

Weight indicator before cementing: _____ ; after slack-off: _____ ; inches slacked off _____ .

SUMMARY OF STRING AS RUN								
WEIGHT	GRADE	THREAD	MANUFACTURER	CONDITION NEW-USED	LOCATION IN STRING	NO. OF JOINTS	FOOTAGE	INTERVAL
					JT NO. THRU NO.			
					JT NO. THRU NO.			
					JT NO. THRU NO.			
					JT NO. THRU NO.			
					JT NO. THRU NO.			
					JT NO. THRU NO.			
					JT NO. THRU NO.			

PAGE 1 OF 4

CASING TALLY

DATE: April 8, 1977

FIELD NPR-4 LEASE & WELL NO. So. Simpson No. 1 TALLY FOR 10 3/4 " CASING

JOINT NO	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR
1	43	15			60.7#
2	44	56			J-110
3	41	72			
4	41	62			
5	43	00			
6	43	68			
7	45	82			
8	43	64			
9	42	68			
10	14	05			
TOTAL A	433	32			

JOINT NO	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR
1	41	18			
2	41	30			
3	40	64			
4	44	24			
5	44	32			
6	39	31			
7	44	68			
8	43	10			
9	40	65			
40	38	65			
TOTAL D	418	07			

1	42	05			
2	40	90			
3	41	38			
4	42	72			
5	43	25			
6	43	86			
7	43	30			
8	42	91			
9	42	41			
20	43	56			
TOTAL B	427	34			

1	44	80			
2	41	45			
3	43	58			
4	39	45			
5	39	40			
6	29	51			
7	33	84			
8	41	04			
9	35	45			
50	39	70			
TOTAL E	388	20			

1	42	33			
2	44	55			
3	40	15			
4	48	66			
5	40	26			
6	44	50			
7	45	80			
8	41	09			
9	36	37			
30	39	82			
TOTAL C	417	53			

TOTAL A	433	32		
TOTAL B	427	34		
TOTAL C	417	53		
TOTAL D	418	07		
TOTAL E	388	20		
TOTAL PAGE	2084	46		

PAGE 2 OF 4 **CASING TALLY** DATE: April 8, 1977

FIELD NPR-4 . LEASE & WELL NO. So. Simpson No. 1 TALLY FOR 10 3/4 " CASING

JOINT NO	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	40	44			60.7# J-110
2	33	52			
3	40	14			
4	39	95			
5	38	94			
6	37	57			
7	36	40			
8	36	76			
9	38	90			
60	33	49			
TOTAL A	376	11			

JOINT NO	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR
1	37	29			
2	30	62			
3	29	78			
4	37	18			
5	38	98			
6	39	39			
7	45	95			
8	38	65			
9	36	11			
90	41	80			
TOTAL D	375	75			

1	36	55			
2	34	98			
3	27	26			
4	40	46			
5	34	88			
6	32	10			
7	37	07			
8	30	74			
9	38	82			
70	34	02			
TOTAL B	346	88			

1	40	46			
2	36	81			
3	40	36			
4	34	59			
5	30	36			
6	40	02			
7	39	95			
98	44	70			
9					
0					
TOTAL E	307	25			

1	40	46			
2	39	88			
3	35	05			
4	35	85			
5	30	69			
6	35	65			
7	35	85			
8	40	39			
9	39	89			
80	36	70			
TOTAL C	370	41			

TOTAL A	376	11		
TOTAL B	346	88		
TOTAL C	370	41		
TOTAL D	375	75		
TOTAL E	307	25		
TOTAL PAGE	1776	40		

PAGE 3 OF 4 **CASING TALLY** DATE: April 8, 1977

FIELD NPR-4 LEASE & WELL NO. So. Simpson No. 1 TALLY FOR 10 3/4 " CASING

JOINT NO	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1					60.7#
2					J-110
3					
4					
5					
6					
7					
8					
99	41	70			
100	44	00			
TOTAL A	85	70			

JOINT NO.	FIRST MEASUREMENT FEET	FIRST MEASUREMENT .00'S	CHECK MEASUREMENT FEET	CHECK MEASUREMENT .00'S	WT GR.
1	42	63			
2	44	10			
3	40	57			
4	43	45			
5	43	58			
6	45	15			
7	40	48			
8	44	57			
9	44	14			
1300	37	36			
TOTAL D	426	03			

1	45	56			
2	37	47			
3	34	70			
4	43	45			
5	43	90			
6	42	69			
7	43	65			
8	44	12			
9	40	88			
110	43	92			
TOTAL B	420	34			

1	43	50			
2	38	62			
3	44	50			
4	41	86			
5	44	11			
6	42	76			
7	42	10			
8	33	18			
9	43	69			
140	43	62			
TOTAL E	417	94			

1	39	60			
2	40	51			
3	40	40			
4	33	87			
5	39	78			
6	43	44			
7	44	31			
8	43	97			
9	36	30			
120	35	98			
TOTAL C	398	21			

TOTAL A	85	70			
TOTAL B	420	34			
TOTAL C	398	21			
TOTAL D	426	03			
TOTAL E	417	94			
TOTAL PAGE	1748	22			

PAGE 4 OF 4 **CASING TALLY** DATE: April 8, 1977

FIELD NPR-4 LEASE & WELL NO. So. Simpson No. 1 TALLY FOR 10 3/4" CASING

JOINT NO	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR.
1	43	16			60.7#
2	45	13			P-110
3	43	01			
4	42	21			
5	43	02			
6	40	17			
7	40	89			
8	44	53			
9	43	19			
10	44	81			
TOTAL A	430	12			

JOINT NO.	FIRST MEASUREMENT FEET	.00'S	CHECK MEASUREMENT FEET	.00'S	WT GR
1	38	52			
2	38	25			
3	36	24			
4	27	88			
5	31	17			
6	34	29			
7	38	72			
8	38	97			
9	39	05			
10	40	32			
TOTAL D	363	41			

1	43	30			
2	44	80			
3	44	10			
4	44	17			
5	40	00			
6	40	15			
7	43	05			
8	34	94			
9	44	33			
10	39	58			
TOTAL B	418	42			

1	38	58			
2	38	17			
3	34	20			
4	31	05			
5	32	56			
6	34	32			
7	36	90			
8	26	08			
9					
0					
TOTAL E	271	86			

1	36	18			
2	39	98			
3	44	29			
4	38	10			
5	35	42			
6	37	82			
7	26	04			
8	37	73			
9	32	95			
10	36	40			
TOTAL C	364	91			

TOTAL A	430	12		
TOTAL B	418	42		
TOTAL C	364	91		
TOTAL D	363	41		
TOTAL E	271	86		
TOTAL PAGE	1848	72		

CASING OR LINER CEMENT JOB

Lease Naval Petroleum Reserve No. 4 Well So. Simpson No. 1 Date April 8, 1977

Size Casing 10 3/4" Setting Depth 7205.94 Top (liner hanger) _____

Hole Size 13 1/2" Mud Gradient .551 psi/ft (10.6 ppg) Viscosity _____

Casing Equipment

10 3/4" Dowell shoe, Dowell float located 89 feet

above shoe, _____ (DV, FO) collars located at _____ feet

and _____ feet

Two centralizers located 7162' - 7071'

_____

_____ scratchers located _____

_____

Liner hanger and pack off (describe) _____

_____

Miscellaneous (baskets, etc.) _____

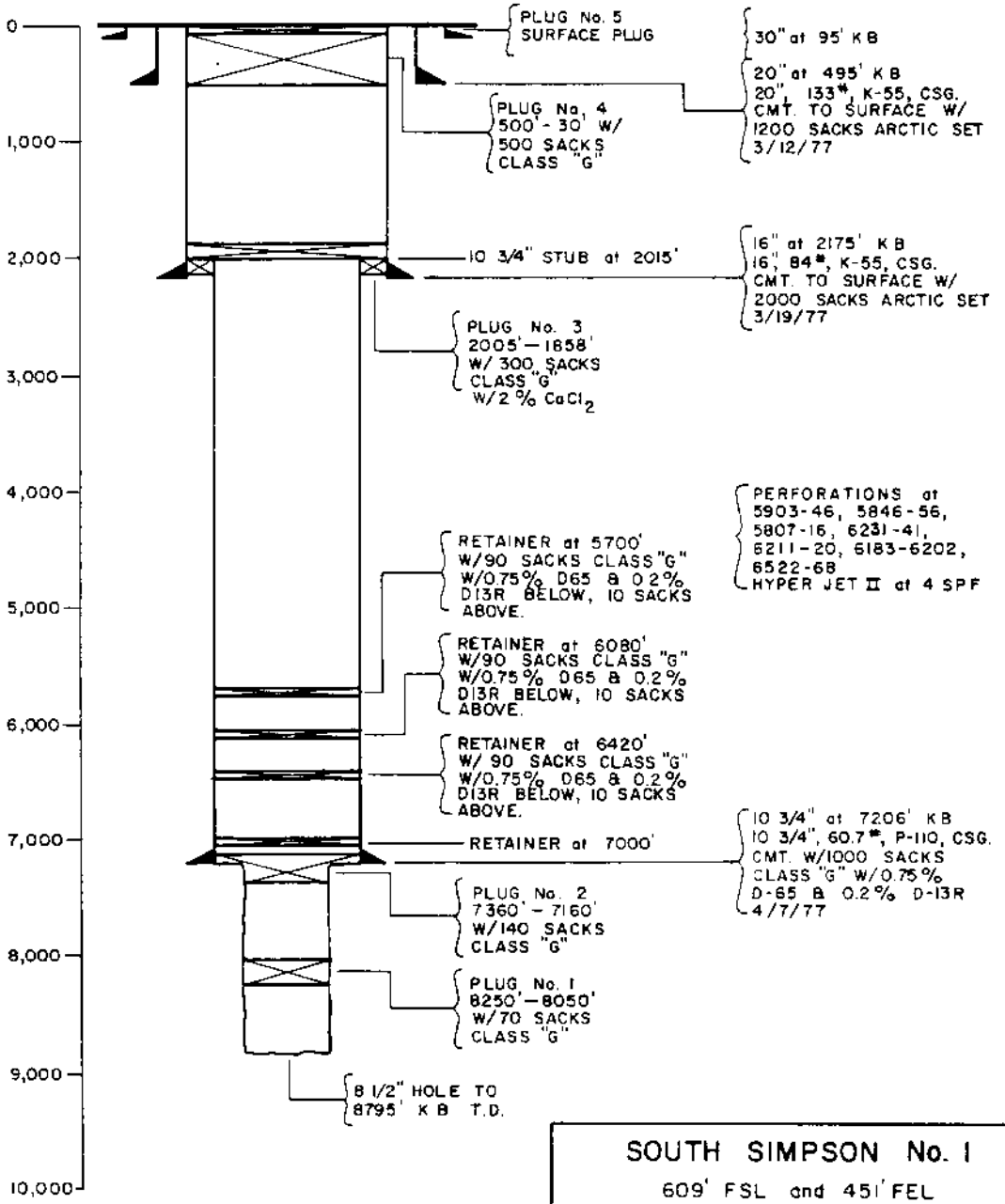
_____

Cement (around shoe)

	No. Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(1)	1000	Kaiser	"G"	.75% D-65, .2% D-132	15.8	1157 cu ft
(2)						

Cement through (DV, FO) Collar at _____ feet

	No Sacks	Brand	Type	Additives	Slurry Weight	Slurry Volume
(3)						
(4)						



SOUTH SIMPSON No. 1

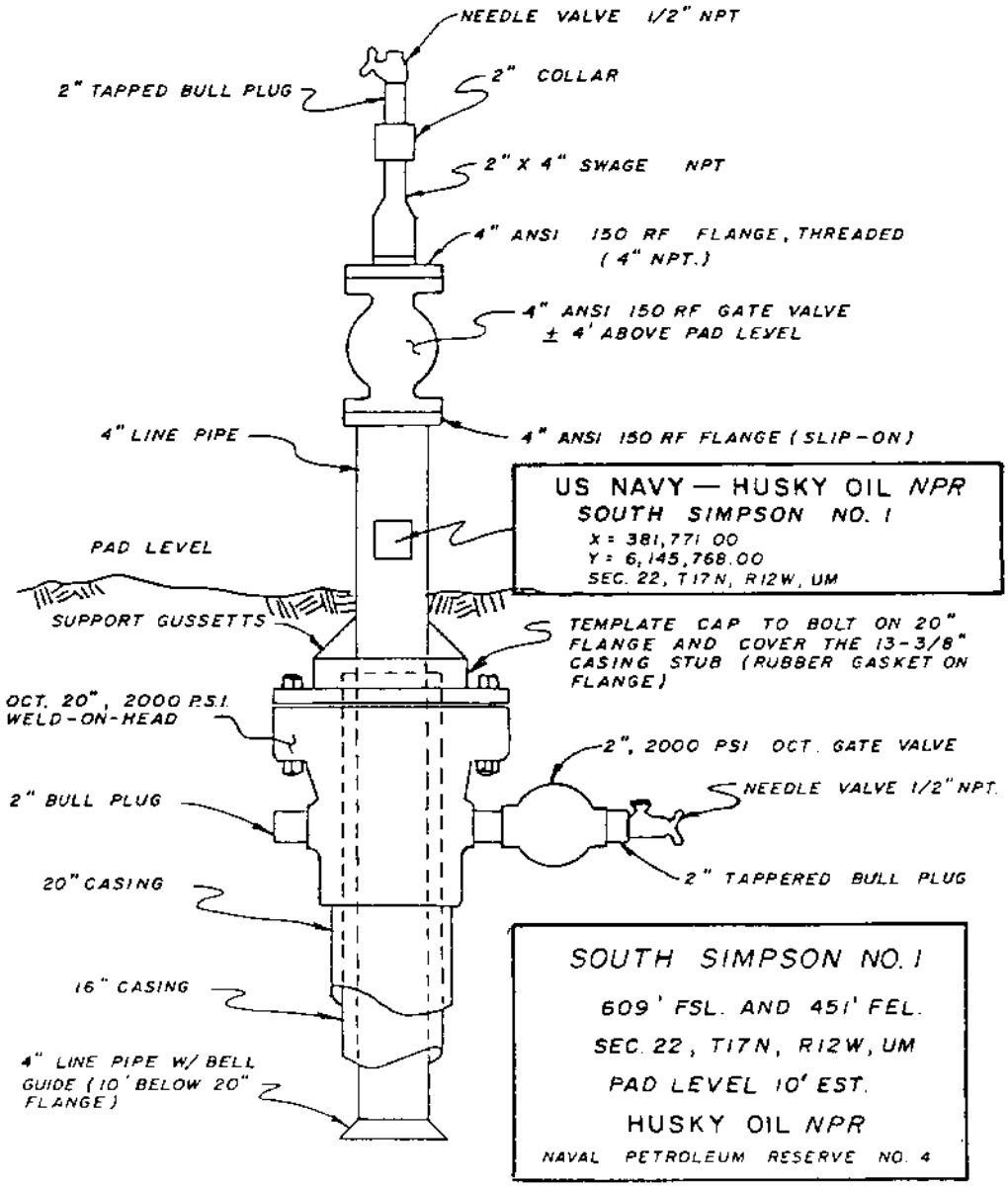
609' FSL and 451' FEL
Sec. 22, T17N., R12W., U M.
PAD LEVEL 10' Est.
KB 25' Est.

HUSKY OIL *N.P.R.*

NAVAL PETROLEUM RESERVE No. 4

WELLBORE SCHEMATIC

ABANDONMENT HEAD



RIG INVENTORY

Draw Works

Emsco A 800, Serial No. 11, grooved for 1-1/4" line. Equipped with 46" Parkersburg hydromatic brake, sand line drum, and Emsco air operated catheads.

Rig Drive

Emsco A 83 sectional compound; Serial No. 11.

Engines

Three Caterpillars, D379, turbocharged diesel engines, Serial Nos. 68B 1724, 68B 1725, and 68B 1726.

Pumps

Oilwell A1000P, Serial No. P-117-34.

National C 350 with National forged steel fluid end.

Substructure

Lee C. Moore Corporation, 15' high, 23' wide, 52' long.

Mast

Lee C. Moore Corporation 136', Serial No. T3119. Equipped with Lee C. Moore kit. Hook load with 12 lines, 600,000 lbs.

Blocks

Emsco RA-44-5, Serial No. 45.

Swivel

Emsco L 400, Serial No. 14T.

Rotary Table

26" Oilwell.

Tongs

BJ, type OB.

Accumulator

Koomey, Model T-201603S, 3,000 lb. w.p.

Blowout Preventers

One - 13-5/8", 5,000 lb. Hydril, Serial No. 3588.

One - 13-5/8", 5,000 lb. Shaffer LWS double.

Boilers

Two Kewanee, 100 HP, Scotch Marine boilers with Kewanee oil burners.

Mud Tanks

No. 1: 35' long, 9' 6" wide, 6' 10" high, mud tank complete with insulated cover.

No. 2: 38' 10" long, 9' 6" wide, 6' 10" high, mud tank with insulated cover.

No. 3: 32' long, 9' 6" wide, 6' 10" high, mud tank with insulated cover.

Degasser

Clark Gas Hog.

Desander

Pioneer, 10 cone.

Desilter

Swaco, 8 cone.

Overshots

One 10-5/8" Bowen, maximum catch 9".

One 8" Bowen, maximum catch 6-3/4".

Water-Fuel Tanks

One combination water/fuel tank; capacity 400 lbs. water, 8,000 gallons fuel.

Two upright water tanks; capacity 400 lbs.

Drill Collars

Twenty-one 7-3/4" O.D., 2-7/8" I.D. drill collars, 6-5/8" H90 connections.

Twenty-one 6-1/4" O.D., 2-7/8" I.D. drill collars, 4-1/2" H90 connections.

Drill Pipe

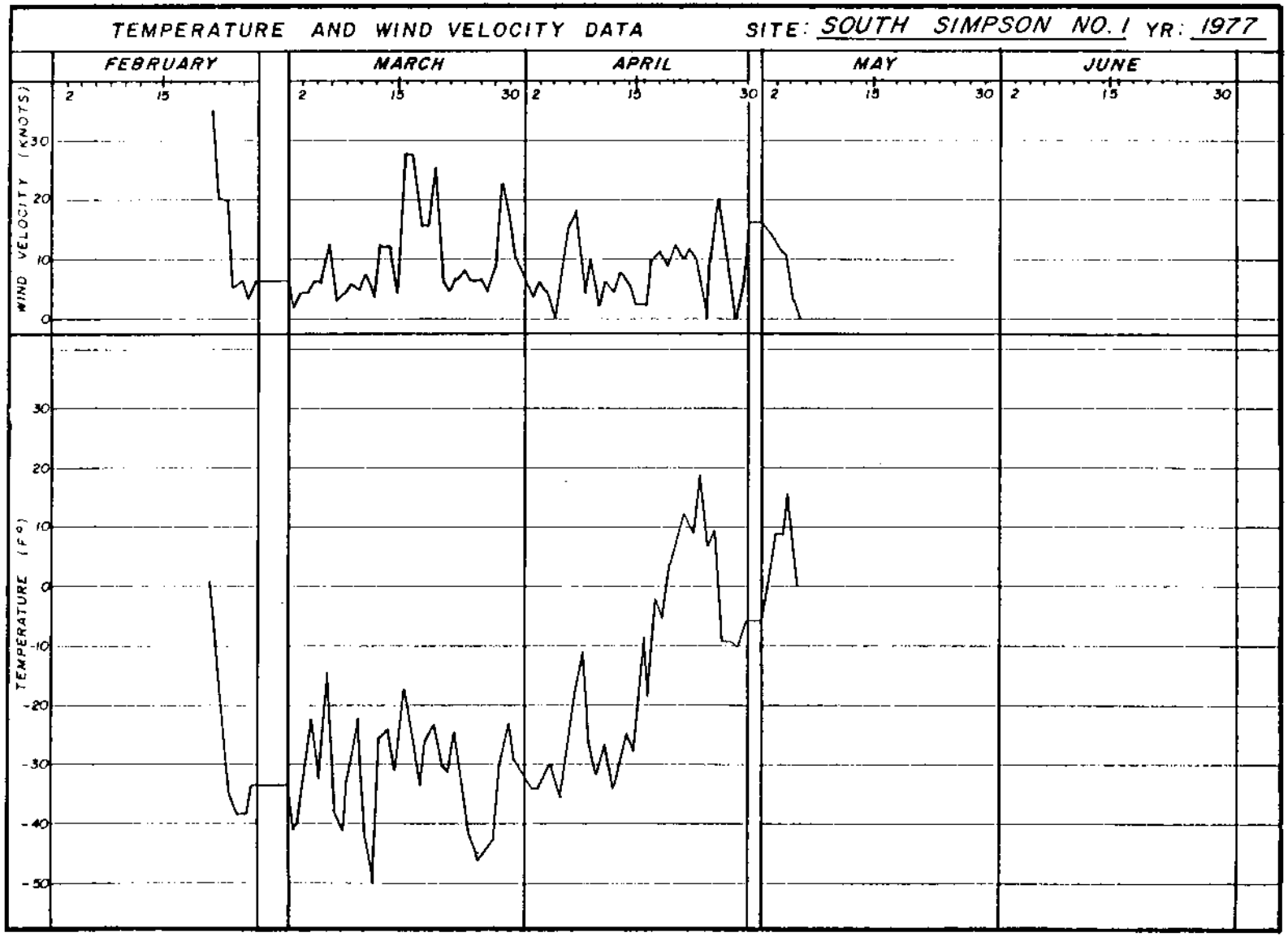
Ninety joints 5", 19.5 lb., Grade G; 5", 19.5 lb., Grade E as needed.

Air Heater

One Tioga, 4,200,000 BTU air heater.

Generator

Two Caterpillars, D353, 200 KW generator sets and required distribution system.


TEMPERATURE AND WIND VELOCITY DATA
SITE: SOUTH SIMPSON NO. 1 YR: 1977
FEBRUARY
MARCH
APRIL
MAY
JUNE
2
15
30
WIND VELOCITY (KNOTS)
30
20
10
0
TEMPERATURE (F°)
30
20
10
0
-10
-20
-30
-40
-50